

Application No. 10/695,921

Docket No.: 08211/0200347-US0

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A circuit for producing a reference voltage between a first node and a second node, comprising:

a resistive element and a junction device coupled in series between the first node and the second node, wherein the junction device includes a junction and has a negative temperature coefficient; [[and]]

a first and a second current sources to route respectively a first and a second bias currents to the resistive element and to the junction device such that a resulting first branch current through the resistive element is unequal to a resulting second branch current through the junction device,

wherein the first current source is adapted to transmit the first bias current through the resistive element, and wherein the second current source is adapted to transmit the second bias current through the junction device for biasing the junction, without transmitting the second bias current through the resistive element; and wherein the first bias current reaches the intermediate node after the resistive element and before the junction device; and

a third current source to extract a drained current from the intermediate node.

2. (Original) The circuit of claim 1, wherein

the first bias current has a different manufacturing process variation dependence than the second bias current.

3. (Original) The circuit of claim 1, wherein

the second bias current is larger than the first bias current.

4. (Canceled)

5. (Canceled)

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6. (Currently Amended) The circuit of claim [[5]] 1, wherein the drained current approximately equals the first bias current, and has approximately the same manufacturing process variation dependence as the first bias current.
7. (Currently Amended) The circuit of claim [[5]] 1, further comprising:
a current mirror structure for controlling concurrently the first current source and the third current source.
8. (Original) The circuit of claim 1, further comprising:
a current source controller to control the second current source, wherein the current source controller is controlled by the reference voltage.
9. (Original) The circuit of claim 8, wherein
a feedback loop is defined from the current source controller being controlled by the control voltage and in turn controlling the second current source, and
the current source controller controls the second current source such that the feedback loop has an open loop gain of less than one.
10. (Currently Amended) A device for producing a reference voltage between a first node and a second node, comprising:
means for forcing a first circuit that forces a first branch current through a resistive element to generate a resistive voltage drop between the second node and an intermediate node;
[[and]]
means for forcing a second circuit that forces a second branch current through a junction device that includes a junction and has a negative temperature coefficient to generate a junction voltage drop between the intermediate node and the first node, wherein the second branch current is unequal to the first branch current[.]; and
a third circuit that extracts a drained current from the intermediate node.

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11. (Original) The device of claim 10, wherein
the first branch current has a different manufacturing process variation
dependence than the second branch current.
12. (Original) The device of claim 10, wherein
the second branch current is larger than the first branch current.
13. (Currently Amended) The device of claim 10, further comprising:
means for a fourth circuit that enables the draining from the intermediate node
a drained current that approximately equals the first branch current, and has
approximately the same manufacturing process variation dependence as the first
branch current.
14. (Currently Amended) A method comprising:
forcing a first branch current through a resistive element to generate a resistive voltage
drop;
forcing a second branch current through a junction device that includes a junction and has
a negative temperature coefficient to generate a junction voltage drop, wherein the second branch
current is different from the first branch current; [[and]]
adding the resistive voltage drop to the junction voltage drop to generate a
reference voltage;
wherein the first branch current is arranged to transmit a first bias current through the
resistive element, and wherein the second branch current is arranged to transmit a second bias
current through the junction device for biasing the junction, without transmitting the second bias
current through the resistive element, and wherein the first bias current reaches an intermediate
node after the resistive element and before the junction device; and
extracting a drained current from the intermediate node with a third branch current.

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15. (Original) The method of claim 14, wherein
the first branch current has a different manufacturing process variation
dependence than the second branch current.
16. (Original) The method of claim 14, wherein
the second branch current is larger than the first branch current.
17. (Original) The method of claim 14, further comprising:
combining the first branch current with a bias current to generate the second branch
current.
18. (Original) The method of claim 17, further comprising:
controlling the bias current by the reference voltage.
19. (Original) The method of claim 17, further comprising:
draining at least some of the first branch current.
20. (Original) The method of claim 19, wherein
the drained current approximately equals the first branch current, and has approximately
the same manufacturing process variation dependence as the first branch current.